

Honors Chemistry - Atomic Structure & Energy of Electrons Lab 2

Stasya

1 Lab 1: Flame Test Lab

Purpose: To identify the colors made by different metal ions using a flame test, and to identify an unknown based on the color it produces in a flame test.

Safety: Both barium chloride and cupric chloride are toxic by inhalation and ingestion. Use tiny amounts and wash hands when leaving the lab. Do not rub eyes or face without washing hands first.

Procedure:

1. Dip the soaked wooden splint in one chemical at a time, make a few crystals stick to the splint.
2. Hold the end of the splint with the crystals in the burner flame and observe the first color you see. When it changes to orange, the splint is burning and we don't care about the color.
3. Use your book or the chart on the wall to estimate the wavelength of the color being produced.
4. Obtain an unknown from your teacher, record the letter of the unknown, and do a flame test on the unknown. It will be one of the chemicals you have already tested.

Data:

Record data in a table with the chemicals, the color produced, the estimated wavelength, the calculated frequency, and the calculated energy.

Post-Lab Questions:

1. What is the identity of the unknown? Give the chemical name.
2. How do you know that it is not the chloride ion producing the color?

Conclusion:

Write your conclusion on a separate sheet of paper. Discuss why different elements produced different observations. Use scientific vocabulary to convince me that you understand what you observed.